

Claims

We claim:

- 5 1. A method for synchronizing scan opportunities in a mobile communications system comprising the steps of:
 sending time slots between a mobile subscriber and an associated base station wherein the mobile subscriber has a corresponding scan group;
 counting the number of time slots sent between the mobile subscriber and
10 the associated base station; and
 determining whether it is a scan opportunity based upon the count, the scan group of the mobile subscriber, a scan rate, and a scan opportunity divisor and if it is a scan opportunity, then performing a scan of a neighboring base station.
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2. The method of claim 1 wherein the count is associated with a number of frames where one frame is a plurality of time slots.
3. The method of claim 1 where the step of performing a scan is performed by
20 the mobile subscriber.
4. The method of claim 1 wherein the scan rate is a number of scan groups in the mobile communications system.
- 25 5. The method of claim 1 where the scan group is based upon the characteristics of the mobile subscribers of the mobile communications system.

6. The method of claim 1 where the step of determining further comprises evaluating the following equation for the scan opportunity

$$\left| \text{Count} - \text{Scan Group} \right| \% \frac{\text{Scan Variable}}{\text{Scan Opportunity Divisor}} .$$

7. The method of claim 1 wherein the scan group of the mobile subscriber is
5 based upon a subscriber access code.

8. The method of claim 1 wherein the scan group is a grouping of mobile subscribers requiring a similar scan time.

10 9. The method of claim 8 wherein the grouping is based upon characteristics of the mobile subscribers including hardware and software of the mobile subscriber.

10. A system for synchronizing scan opportunities in a mobile
15 communications system comprising:

an associated base station configured to keep a first count of a number of time slots sent between the base station and a mobile subscriber;

the mobile subscriber configured to receive communications from the associated base station and configured to keep a second count of a number of time
20 slots sent between the base station and the mobile subscriber;

a processor for determining a scan opportunity based upon the first count and the second count, a scan group of the mobile subscriber, a scan rate, and a scan opportunity divisor, wherein

the mobile subscriber scans to a neighboring base station on a scan
25 opportunity.

11. The system of claim 10 wherein the first count and the second count are associated with a number of frames where one frame is a plurality of time slots.

12. The system of claim 10 where the processor evaluates the following

equation for the scan opportunity $\left| \text{Count} - \text{Scan Group} \right| \% \frac{\text{Scan Variable}}{\text{Scan Opportunity Divisor}} .$

13. The system of claim 10 wherein the scan group of the mobile subscriber is
5 based upon a subscriber access code.

14. The system claim 10 wherein the scan group is a grouping of mobile
subscribers requiring a similar scan time.

10 15. The system of claim 14 wherein the grouping is based upon characteristics
of the mobile subscribers including hardware and software of the mobile
subscriber.

16. A system for synchronizing scan opportunities in a mobile
15 communications system comprising:
means for sending time slots between a mobile subscriber and an
associated base station wherein the mobile subscriber has a corresponding scan
group;

means for counting the number of time slots sent between the mobile
20 subscriber and the associated base station; and

means for determining whether it is a scan opportunity based upon the
count of frames, the scan group of the mobile subscriber, a scan rate, and a scan
opportunity divisor.

25 17. The system of claim 16 wherein the count is associated with a number of
frames where one frame is a plurality of time slots.

18. The system of claim 16 where the means for determining evaluates the following equation for the scan opportunity ;

$$\left| Count - Scan Group \right| \% \frac{Scan Variable}{Scan Opportunity Divisor} .$$

19. The system of claim 16 wherein the scan group of the mobile subscriber is
5 based upon a subscriber access code.

20. The system of claim 16 wherein the scan group is a grouping of mobile subscribers requiring a similar scan time.